"11 Sept. Dans le jus de resins rien de vivant, le mouvement de circulation de mesme que le 10^{e}."

Have such phenomena been observed by other microscopists? Any suggestions about their precise cause would be very welcome.

The manuscript will be published in the next volume of Huygens's "Œuvres," which is in an advanced state of preparation.

Amsterdam. D. J. KORTEWEG.

NATURAL HISTORY AND THE OCEAN.[1]

(1) THIS is a new work on birds by the distinguished ornithologist, Dr. Anton Reichenow, of Berlin, which when completed will consist of two volumes. This, the first, contains a general review of the class Aves, followed by a systematic account of the Ratitæ, Natatores, Grallatores, Cutinares (Deserticolæ, Crypturi, Rasores, Gyrantes), Raptatores, and Fibulatores. Excellent line sketches illustrating special diagnostic characters are imbedded pleasantly in the text. Each family, with the genera included in it, is concisely characterised and its geographical distribution indicated, while of the species the more important are enumerated often with remarks on those of special interest. When finished "Die Vögel" will form, if not a "handbook," at least a compact and useful synopsis of systematic ornithology. Unfortunately, like so many German publications it can scarcely be said to be "bound," for with very little provocation it collapses into an inchoate mass of sheets.

(2) This will prove an invaluable book of reference for all who may have to study the avifauna of not only Australia, but of the southern hemisphere, notwithstanding that many of Mr. Mathews's co-workers will probably disagree with him in the distinctness of the numerous, and, as we think, too numerous subspecies he describes. The introduction provides us with a very interesting ornithological history of Australia, and an important discussion of the faunal regions into which the continent appears to be divided from the point of view of its birds. We observe that he recognises, as we believe rightly, the existence in Australia of an element derived from, or once forming, part of an ancient antarctic continent, then possessing a climate very different from that now existing. The nomenclature adopted by the author follows the several rules of strict priority formulated by the different international zoological congresses of recent years, and of necessity, therefore, sweeps away many names which we cling to from being familiar to us for more than half a century, and which we relinquish, if relinquish them we must, with the deepest reluctance.

Mr. Mathews's "List" represents an amazing amount of the hardest and driest kind of work (to all appearance done once for all), which only those who have some experience in threading the mazes of synonymy can appreciate, and for this ornithological literature must be grateful to him *in saecula saeculorum.*

(3) This is a very disappointing book, full of loose and unqualified dogmatic assertions, such, for example, as: "Many [sea-birds] have for so long a time resorted to rocks . . . that though they may be active enough as swimmers and divers when upon or in the water, they are strangely laborious upon the wing. . . ." How about gannets, pelicans, many cormorants, terns, guillemots? The illustrations are very rough reproductions of pen-and-ink drawings.

(4) Dr. G. A. Boulenger is too well known an authority on the reptilia for anyone to be in doubt as to the value of this volume. "There is no work in the English language," the author informs us in the preface, "dealing with the reptiles of Europe. I have, therefore, endeavoured to supply this desideratum so far as the snakes are concerned." His account of the species found in Europe is preceded by a concise and very excellent introduction, summarising what is known of snakes generally, dealing with their external characters, their anatomy, reproduction, habits, distribution—of which one remarkable fact stated is that the zoogeographical regions into which the world is usually divided do not lend themselves any better than the ordinary divisions of physical geography to the study of the distribution of snakes—and finally, their relation to man. The systematic account is illustrated by a beautiful figure of each species, drawn by Prof. Sordelli, of Milan, for his own and Prof. Ian's "Iconographie Générale des Ophidiens," and reproduced in this volume with his permission.

(5) Mr. B. B. Woodward's "Life of the Mollusca" is another addition to the same excellent series being issued by Messrs. Methuen, to which Dr. Boulenger's belongs. The work gives a succinct account of the history, relationships, and everyday life, with general notes on the anatomy, classification, and distribution of this group of the animal kingdom. The classification here given is based mainly on conchological characters; but in the Mollusca this is never felt to stand on quite the same certain basis as that in other zoological groups, inasmuch as so many of the species are determined upon the house they inhabit, and not on the inhabitants themselves. A very remarkable instance of such a discrepancy was recently discussed in a paper before the Zoological Society, in which the conchological relationships of a new species of Papuina from New Guinea disagreed with those indicated by its anatomical characters. The volume is well illustrated by more than thirty plates, most of the figures of which originally

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[1] (1) "Die Vögel." Handbuch der Systematischen Ornithologie. By Anton Reichenow. Zwei Bände. Erster Band. Pp. viii+529. (Stuttgart: Ferdinand Enke, 1913.) Price 15 marks.

(2) "A List of the Birds of Australia." By G. M. Mathews. Pp. xxvii+453. (London: Witherby and Co., 1913.) Price 10*s*. net.

(3) "The Wonders of Bird-life." By W. Percival Westell. Pp. 128. (Manchester: Milner and Co., n.d.) Price 1*s*. net.

(4) "The Snakes of Europe." By Dr. G. A. Boulenger. Pp. xi+269+plates. (London: Methuen and Co., 1913.) Price 6*s*.

(5) "The Life of the Mollusca." By B. B. Woodward. Pp. xi+158+plates. (London: Methuen and Co., 1913.) Price 6*s*.

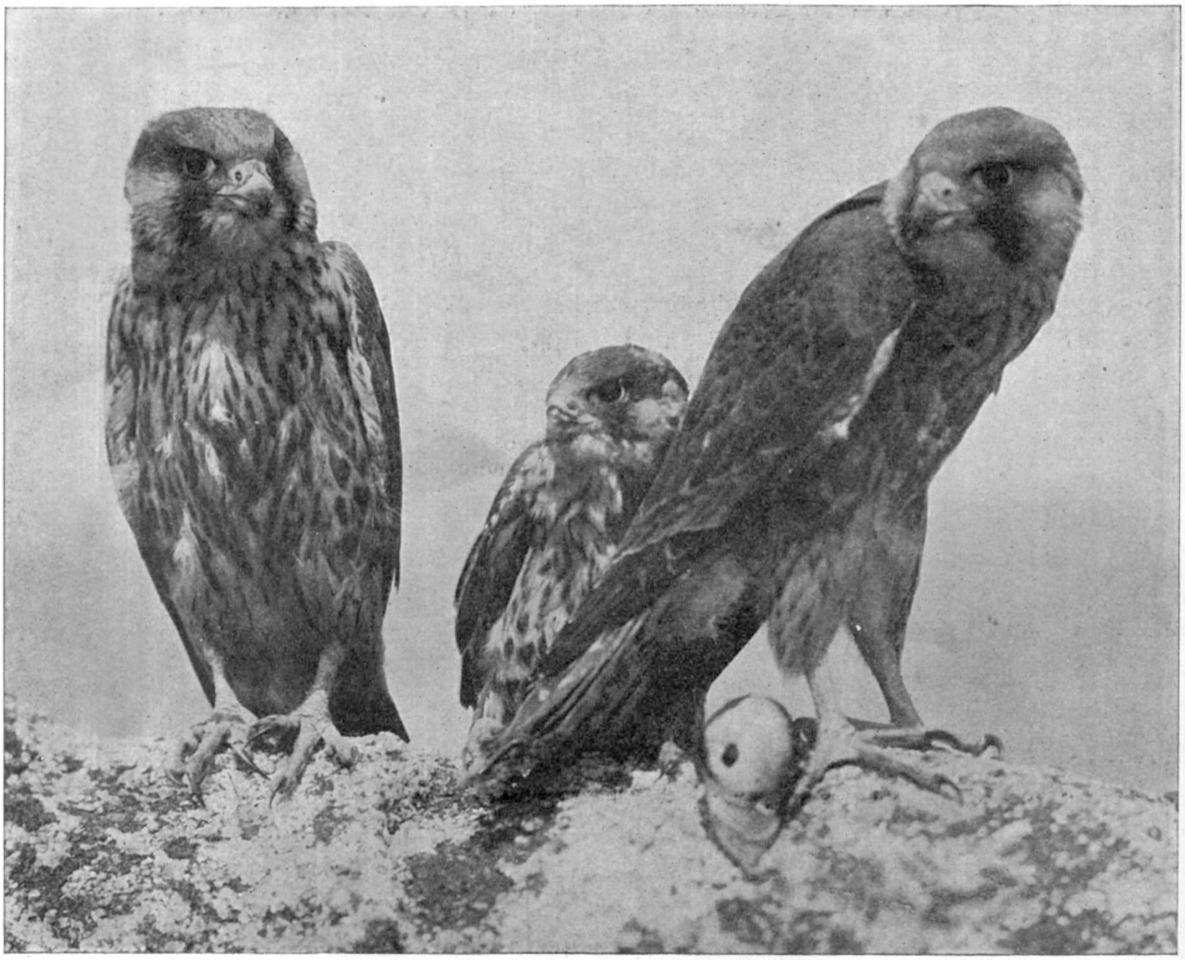
(6) "The Peregrine Falcon at the Eyrie." By F. Heatherley. Pp. x+78. (London: *Country Life*, 1913.) Price 5*s*. net.

(7) "The Holiday Nature-book." By S. N. Sedgwick. Pp. 355+plates. (London: C. H. Kelly, n.d.) Price 3*s*. 6*d*.

(8) "The Ocean: A General Account of the Science of the Sea." By Sir John Murray. Pp. 256+xii plates. (London: Williams and Norgate, n.d.) Price 1*s*. Home University Library.

appeared in the late Dr. S. P. Woodward's well-known "Manual of the Mollusca."

(6) In this volume Mr. Heatherley describes minutely and illustrates fully by a wealth of pictures taken—during successive seasons—from hour to hour during daylight from an adjacent but concealed observation shelter, the intimate nesting history of the Peregrine Falcon from the time the eyrie was tenanted and the eggs laid until the young hatched out and were fed to maturity. The monograph forms an interesting and very valuable record of a long watch pursued with great conscientiousness and endurance, regardless of the many discomforts which it entailed, by the author and his friends who from time to time mounted guard in his place. Mr. Heatherley notes as a previously "unrecorded fact that after the first few days the falcon turned over to the tiercel the duties of her sex, spending his time abroad hunting and bringing the quarry to the tiercel who remained at home to feed and look after the young." As the book is one of the series of studies issued by *Country Life*, it is needless to state that the illustrations—one of which is reproduced, by the courtesy of the publishers—are up to the high standard that we are accustomed to in that journal. It is a pity, we think, that in a work of this character some of the pages should be furnished with very frivolous headlines.



Young Peregrine Falcons, twenty-nine days old. From "The Peregrine Falcon at the Eyrie."

(7) The next volume on our list is written for the "increasing number of people, young and old," who "are interested in popular nature-study." Nearly half of its contents deals with objects of the sea-shore; the remainder is devoted to birds of the garden, spiders, beetles, and moths. Two chapters are given up to nature photography and how to photograph small objects. A specimen nature calendar, with the chief notabilia for each month of the year, partly filled up and left to be completed by the reader, is included. So far as sampled, the information is accurate, and is conveyed in language understandable by those for whom the book is designed. Some of the photographic reproductions might be improved upon.

(8) A book on the ocean by Sir John Murray—

the greatest investigator of the deep and the highest authority on all that concerns the science of the sea—would seem to require no more in the way of review and recommendation than the mention of that fact. Yet it may be well to state that within the compass of 256 pages of thirty lines each we have perhaps the most concise and the most scientific account of this immense subject that has yet been written, set forth in language that the reader most unfamiliar with the subject can grasp with perfect facility. In being, alas! the final contribution to science, we believe, from John Murray's pen, it is sadly appropriate as a summing up of the work to which his long, arduous, and brilliant scientific life was devoted. Its various chapters deal with the methods and instruments of deep-sea research, the depths of the ocean, the physical characters of its waters, oceanic circulation, life in the ocean, marine deposits, and the geospheres. A glossary, a concise bibliography, and a sufficient index close the volume. It is more fully illustrated than most of its predecessors. There are twelve plates, of which six are coloured maps by Bartholomew of wonderful clearness notwithstanding their size, showing the deeps, the salinity, the surface temperatures, the currents, the surface density, and the deposits of the ocean.

THE ADMINISTRATIVE PROBLEM OF SLEEPING SICKNESS.

THE Report of the Inter-Departmental Committee on Sleeping Sickness (Cd. 7349, price 3*d*.), recently published, is a most valuable summary of present knowledge on the subject. The committee have taken the evidence of all the leading authorities on the subject, both British and foreign, and the enormous mass of evidence put before them (printed separately as Cd. 7350) has been very carefully sifted and analysed in the Report, which is signed by all members of the committee with certain reservations by two of them (Dr. W. A. Chapple, M.P., and Mr. J. Duncan Millar, M.P.), who have appended a separate memorandum embodying their opinions with regard to the game question.

The following are some of the opinions or recommendations expressed by the committee with regard to controversial questions either of scientific knowledge or practical administration.

The problems which arise with regard to trypanosomiasis in man in Nyasaland and Rhodesia are wholly distinct from the problems which arise in Uganda. Nyasaland trypanosomiasis is caused by *T. rhodesiense* and conveyed by *Glossina morsitans*; it is a very small factor in the general bill of mortality; it is probably an old and endemic disease, and there appears to be no evidence to indicate that it is likely to become epidemic. On the other hand, Uganda trypanosomiasis is caused by *T. gambiense* and conveyed by *G. palpalis*; it has been known on the west coast of Africa for at least one hundred years, but was first introduced into Uganda at the end of the last century, probably by infected native porters coming from the Congo, and it is believed to have destroyed about 200,000 natives between 1898 and 1906. There is a general agreement among experts that Uganda trypanosomiasis is not endemic beyond the range of *G. palpalis*. *T. rhodesiense* infection is much more virulent than *T. gambiense* infection. All authorities believe the diseases to be distinct, though allied.

The committee considers that the elimination of Glossina as the carrier must be the principal object of all efforts to check or get rid of the disease. The evidence all points to the conclusion that if the tsetse-fly could be eliminated or removed from contact from human settlement, sleeping sickness would practically disappear, infection conveyed by other flies being a negligible factor in the spread of the disease. For this reason the committee attach great importance to a proper and sufficient equipment of entomological research into the bionomics of the incriminated tsetse-flies. This form of research has, in their view, been insufficiently pursued up to the present time. In this form of research there is a large element of chance; accident may at any time lay bare a result which may lead to the solution of the problem, and the multiplication of the workers is the multiplication of chances.

With regard to the vexed question of the reservoir and the advisability or otherwise of game-destruction:—(1) As regards Uganda trypanosomiasis, there is abundant evidence that human beings, infected but able to get about, serve as reservoirs of the virus, maintaining the endemicity of the disease, and that they may in travelling distribute it widely. There is also evidence that in the absence of men wild animals may be a source of the virus. It is doubtful how much importance should be attached to the antelope as a reservoir of *T. gambiense*. The part this reservoir plays is probably small in comparison with infected man, and to a less extent his domestic animals; for cattle, sheep, and goats have been known to harbour this trypanosome and take no harm.

(2) As regards Nyasaland trypanosomiasis, the committee consider the identity of *T. rhodesiense* with the similar trypanosome found in game, in the same districts, as unproven. The wild animals in question are undoubtedly reservoirs of the trypanosomes pathogenic to stock; but the evidence is conflicting as to whether the wild animals which are a reservoir of the disease affecting domestic stock are a danger to man. Knowledge of the disease, its cause, and its remedies, is still in the making, and hasty and imperfectly considered action of a drastic character such as the attempt to effect a general destruction of wild animals is not justified by the evidence before the committee. In Nyasaland and Rhodesia the incidence of the disease on the population is slight and it is not increasing.

The proposed experiment of removal of wild